

METHOD OF DETECTING A FIRE BY IR IMAGE PROCESSING

ABSTRACT OF THE DISCLOSURE

A method of detecting a fire in a scene by infrared (IR) radiation image processing comprises the steps of: receiving a sequential plurality of IR radiation images of the scene, each image including an array of picture elements (pixels), each pixel having a value that is representative of the pixel's portion of IR radiation intensity in the array of the scene image; identifying a region of pixels in one image based on pixel values; tracking the region through images subsequent the one image to determine a change of the region that meets predetermined IR radiation criteria; and detecting the fire in the scene based on the determined change of the region. In one embodiment, the step of tracking includes the steps of: identifying the region in images subsequent the one image; and comparing the identified regions of the one and subsequent images to determine a change of the region that meets the predetermined IR radiation criteria. In another embodiment, the step of detecting the fire includes the steps of: identifying the region in sequential images of a predetermined period of time subsequent the one image; comparing the identified regions of the one and sequential images to determine motion changes of the region; calculating a motion value of the region based on the determined motion changes thereof; and determining fire of a certain type based on the motion value of the region.